Public Works (1905) Department.

SERIAL No. 21

G.O., No. 316-317 I

DATED 21-3-1905

Proof
100/4 copies of G.O.
23/2 copies of Sub. with docket at the back for the S.T.I. 0
30 copies of sub. for records 3 2 2

[Despatch Abstract.]

Auxiliary Head Sluice at Bezwada

Letter from the G. of I, declining to sanction the estimate, amounting to Rs 94,095, for constructing an ——— and directing the dismantlement of the old Head Sluice, communicated to the Officers concerned, and a copy of the Procs: thereon ordered to be forwarded to the Govt of India.

Auxiliary Head Sluice at Bezwada

Forwarding a copy of the Procs: on letter from the G. of I, declining to sanction the estimate, amounting to Rs 94,095, for constructing an ——— and directing the dismantlement of the old Head Sluice.

Indexed.

Indexed 21/3

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

IRRIGATION.
ACCOUNT.

Government {1905} of Madras.

PUBLIC WORKS.

Recd. } 1905. *Enclosures*

Regd. *Spare copies*

G.O., Nos. 316, 317 I., 21st March 1905.

MARCH.

Auxiliary Head Sluice at Bezwada

Forwarding a copy of the Proceedings on letter from the Government of India declining to sanction the estimate, amounting to Rs. 94,095, for constructing an — and directing the dismantlement of the old head sluice.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—again the following papers :—

G.O., No. 603 I., dated 10th June 1903.

Abstract.—Communicating to the officers concerned letter from the Government of India sanctioning the revised estimate, amounting to Rs. 3,18,570, for constructing a new head sluice at Bezwada.

G.O., No. 1387 I., dated 15th December 1904.

Abstract.—Approving the estimate, amounting to Rs. 76,500, for constructing an auxiliary sluice to the left of the Bezwada head sluice and revetment in front of the Workshops and above the lock at Bezwada and ordering that a copy of the Proceedings together with the estimate and plan for the sluice be forwarded to the Government of India for sanction.

G.O., No. 51 I., dated 23rd January 1905.

Abstract.—Ordering that a letter be sent to the Government of India intimating the occurrence of cracks in the 4th and 9th arches of the old head sluice at Bezwada and recommending the demolition of the work.

Read—also the following papers :—

From Mr. SIDNEY PRESTON, C.I.E., Secretary to the Government of India, Public Works Department, Irrigation, Roads and Buildings (Civil Works—Irrigation), to the Joint Secretary to the Government of Madras, Public Works Department, Irrigation Branch, dated Calcutta, 1st February 1905, No. 176 C W.I.

With reference to your letter No. 52 I., dated the 23rd January 1905, I am directed to forward herewith copy of a note, dated the 28th idem, by the Inspector-General of Irrigation, from which it will be seen that he does not recommend that the Government of India should sanction the estimate submitted with your No. 1388 I., dated 15th December 1904, amounting to Rs. 94,095, for constructing an auxiliary head sluice at Bezwada and that he considers that the original intention to dismantle the old head sluice should be carried out. I am to request that if the facts as to the protection above the new head are as stated in the Inspector-General's note, and if His Excellency the Governor in Council sees no objection, the suggestions of the Inspector-General of Irrigation may be given effect to.

2. The estimates and plans received with your No. 1388 I., dated 15th December 1904, are returned herewith.

Enclosure.

Note by Mr. Sidney Preston, Inspector-General of Irrigation, on the proposal to retain the original head sluice of the Kistna Eastern Delta canals at Bezwada and to build an auxiliary one to supplement the supply, dated 28th January 1905.

It is unnecessary for me to recapitulate the history of the construction of the new head sluice as it is given in the papers received with Madras Government No. 1387 I., dated 15th December 1904. The work has been completed and the only question is whether it is necessary to retain the old head.

This was suggested for two reasons—

First—to reduce the head of pressure tending to blow up the lock floor.

Second—to prevent silt forming in the pocket above the new head.

I agree with Messrs. Garrett and deWinton that it is unnecessary to retain the old head from any fear of the water pressure, during a flood, blowing up the lock, or lock channel, floor, and I think that if Mr. Benton, when acting as Inspector-General of Irrigation, had been in possession of the full facts he would never have considered it necessary to retain it. I am told by Mr. Stanley, who discussed the matter with him, that it was an inspection of the section on D.D. (given on the tracing showing the proposals for an auxiliary head) which cause Mr. Benton to form the impression that the floor might be endangered. I reproduce it below for ready reference and have marked its position by the same letters on the paper plan attached to this note which is taken from Madras letter No. 1136, dated 4th December 1903.

This section is incomplete and misleading in the following respects :—

First—No water levels are given.

Second—The floor of lock is not shown.

If we imagine the canal closed and a + 71·0 flood in the river I think any one will admit that Mr. Benton was justified when looking at that section in thinking there was fear of the lock floor blowing up.

If my memory serves me the chief defect in the section is that it does not show the stone flooring on the upstream side of the wall. I believe I am correct in saying the whole area, which I have coloured light red on the paper plan, is paved with ashlar stone — if this be so it entirely alters the complexion of the case ; as any water to get down under the lock to blow up the floor must enter the sub-soil on the upstream face of the present head which is situated at a distance of from 176 to 224 feet from the lock. This is very different from what Mr. Benton was led to think from the section above ; namely, that it could travel straight down the face of the wall not more than 25 feet from the lock itself.

2. As regards the second point it will be seen that Mr. Odling when he reviewed the estimate for the new head sluice foresaw the possibility, but Sir T. Higham did not think that accumulation of silt deposit was to be feared (*vide* note on page 3 of Proceedings, March 1902, Nos. 15–16). Personally I agree with Mr. Odling and the liability struck me at once when I visited Bezwada last year and I should not myself have agreed to the alignment on which the new head has been built but as it has been constructed I certainly think it should be used—the area in which deposit can occur is not very great and it is possible it may be cleared away by a judicious use of the head sluice gates. I am certainly not prepared to recommend Government to sanction the estimate for an auxiliary head amounting to Rs. 94,095 which has been submitted by Madras simply for this reason ; and this being so I think the original intention to dismantle the old head should be carried out.

3. I would dismantle the walls which I have coloured crimson lake down to R.L. + 41·0 and pave the whole of the space between them and the new river retaining wall which I have coloured green either with stone or concrete blocks in the same way as I believe the area marked "basin" and coloured light red is paved. If this be done I cannot think there is any fear of the lock floor being blown up.

Memorandum No. 560, dated 18th February 1905.

With reference to G.O., No. 51 I., dated 23rd January 1905, recommending to the Government of India the demolition of the old head sluice at Bezwada and the abandonment of the proposed auxiliary head sluice, the Superintending Engineer, II Circle, is informed that this recommendation has been accepted by that Government and that formal orders will issue shortly. In the meantime the Superintending Engineer is requested to be so good as to have the flooring * of the basin between the old and new head sluices examined and to report the result at a very early date.

* *Vide* portion marked "basin" in the map circulated with G.O., No. 1136 I., dated 4th December 1903.

(Signed) A. H. GARRETT,
Chief Engineer for Irrigation.

From J. H. MEDLICOTT, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezwada, 3rd March 1905, No. 506 I.

With reference to your memorandum No. 560, dated 18th February 1905, I have the honour to report that the floor of the basin in front of the new head sluices consists of 18 inches thickness of roughstone in mortar laid on sand.

ORDER—No. 316 I., dated 21st March 1905.

The letter from the Government of India read above will be communicated to the officers concerned.

2. The proposal of the Inspector-General of Irrigation to floor the portion coloured green referred to in paragraph 3 of his note is not of much use as a measure to prevent the floor of the lock from blowing up. The pressure of the water at the upper gates would have blown up the floor long ago if the lock had not been kept nearly full when the river was in high flood. As regards the floor of the tail lock channel it is considered that the safety thereof depends on the nature of the flooring in the basin. As it is reported that the floor of the basin consists of roughstone in mortar 18 inches thick laid on sand, this will prevent the floor of the lock channel from blowing up. The Inspector-General's proposal to pave the portion coloured green like the basin floor though not required for the protection of the lock floor, would, it is thought, ensure the better protection of the floor of the lower lock channel. The Superintending Engineer will accordingly be requested to have the work carried out at an early date. He will also be asked to arrange for any repairs required for the basin floor being carefully attended to during every closure of the canal.

3. Ordered that a copy of these Proceedings be forwarded to the Government of India for information together with the paper plan returned.

[Here enter No. 317 I., dated 21st March 1905.]

(True Extract.)

(Signed) A. H. GARRETT,
Joint Secretary to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle (with plans, estimates and copy of the paper plan).
" Examiner, Public Works Accounts.

ENDORSEMENT—No. 317 I., dated 21st March 1905.

Forwarded.

(By order.)

(Signed) A. H. GARRETT,
Joint Secretary to Government,
Irrigation Branch.

Exd. K. Murugasen.

[E. I. / 5] 4,000—25-4-04.

Public Works (1905) Department.

(IRRIGATION BRANCH.)

?? office to ?? return at once. 6/2/05

CURRENT No. ~~1265~~ 3028

From

[Name]

[Designation] Govt of India, P.W.D.

[Station]

No. 176 C.W.D.

Dated 1. 2. 1905.

Enclosures { *Plans* 5, *Others* 3 } *Total* 8

Spare copies

Received 21-3-05 190 .

Registered ~~6. 2. 1905.~~

SUBJECT.

Auxiliary Head Sluice at Bezwada.

Re: the construction of an ——

Sour Papers

BACK PAPERS.

52 I/05 Sent to press

FURTHER PAPERS.

6/2/05

3

2.P

All communications should be addressed to the Secretary to the Government of India, Public Works Department, Irrigation, Roads and Buildings, by *title* NOT by *name*.

No. 176 C.W.I.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

C I V I L W O R K S.
Irrigation.

FROM

MR. SIDNEY PRESTON, C.I.E.,
Secretary to the Government of India,
Public Works Department,
Irrigation, Roads and Buildings.

To

The Joint Secretary to the Government of Madras,
Public Works Department, Irrigation Branch.

Calcutta, the 1st February 1905.

Sir,

With reference to your letter No.52 I., dated the 23rd January 1905, I am directed to forward herewith copy of a note dated the 28th idem by the Inspector General of Irrigation from which it will be seen that he does not recommend that the Government of India should sanction the estimate, submitted with your No.1388 I., dated 15th December 1904, amounting to Rs.94,095 for constructing an auxiliary Head Sluice at Bezwada and that he considers that the original intention to dismantle the old Head Sluice should be carried out. I am to request that if the facts as to the protection above the new head are as stated in the Inspector General's note and if His Excellency the Governor in Council sees no objection the suggestions of the Inspector General of Irrigation may be given effect to.

2. The estimates and plans received with your No.1388 I., dated 15th December 1904 are

returned

returned herewith.

I have the honour to be,

Sir,

Your most obedient servant,

E. G. Stanley
2/2

Offg. Under Secy. to the Govt. of India.

Documents accompanying:-

(i) Note by the Inspector General of Irrigation referred to with a ferrotype plan and a paper plan (the latter to be returned).

(ii) Estimates and plans[x] referred to in para. 2.

x Plans desp'd in a sep. cover registered.

388

Note by Mr. Sidney Preston, Inspector General of Irrigation, on the proposal to retain the original Head Sluice of the Kistna Eastern Delta Canals at Bezwada and to build an auxiliary one to supplement the supply, dated 28th January 1905.

It is unnecessary for me to recapitulate the history of the construction of the new Head Sluice as it is given in the papers received with Madras Government No.1387-I., dated 15th December 1904. The work has been completed and the only question is whether it is necessary to retain the old head.

This was suggested for two reasons

1st. to reduce the head of pressure tending to blow up the lock floor

2nd. to prevent silt forming in the pocket above the new Head.

I agree with Messrs. Garrett and deWinton that it is unnecessary to retain the old Head from any fear of the water pressure, during a flood, blowing up the lock, or lock channel, floor, and I think that if Mr. Benton, when acting as Inspector General of Irrigation, had been in possession of the full facts he would never have considered it necessary to retain it. I am told by Mr. Stanley, who discussed the matter with him, that it was an inspection of the Section on D.D. (given on the tracing showing the proposals for an auxiliary Head) which caused Mr. Benton to form the impression that the floor might be endangered. I reproduce it below for ready reference and have marked its position by the same letters on the paper plan attached to this note which is taken from Madras letter No.1136 dated 4th December 1903.

This

5

This section is incomplete and misleading in the following respects :-

1st. No water levels are given

2nd. the floor of lock is not shown.

If we imagine the canal closed and a + 71.0 flood in the river I think any one will admit that Mr.Benton was justified when looking at that section in thinking there was fear of the lock floor blowing up.

If my memory serves me the chief defect in the section is that it does not show the stone flooring on the up stream side of the wall. I believe I am correct in saying the whole area, which I have coloured light red on the paper plan, is paved with ashlar stone - if this be so it entirely alters the complexion of the case; as any water to get down under the lock to blow up the floor must enter the subsoil on the upstream face of the present Head which is situated at a distance of from 176 to 224 feet from the lock. This is very different from what Mr.Benton was led to think from the section above; namely, that it could travel straight down the face of the wall not more than 25 feet from the lock itself.

2. As regards the second point it will be seen that Mr.Odling when he reviewed the estimate for the new Head sluice foresaw the possibility, but Sir T. Higham did not think that accumulation of silt deposit was to be feared (vide note on page 3 of progs.March 1902 Nos.15-16). Personally I agree with Mr.Odling and the liability struck me at once when I visited Bezwada last year and I should not myself have agreed to the alignment on which the new Head has been built but as it has been constructed I certainly think it should be used - the area in which deposit can occur is not very great and it is possible it may be cleared away by a judicious use of the Head sluice gates. I am certainly not prepared to recommend Government to sanction the estimate for an auxiliary Head amounting to Rs. 94,095 which has been submitted by Madras simply for this reason; and this being so I think the original intention to

dismantle

7 5-8-05

dismantle the old Head should be carried out.

3. I would dismantle the walls which I have coloured crimson lake down to R.L. + 41.0 and pave the whole of the space between them and the new river retaining wall which I have coloured green either with stone or concrete blocks in the same way as I believe the area marked "basin" and coloured light red is paved. If this be done I cannot think there is any fear of the lock floor being blown up.

28th January 1905. S.PRESTON.

C.R.

8 N. 560 I. 18-2-05

6.8

E. I. for perusal

DESPATCHED
DATE 18.2.1905
ENCLOS...............

Memorandum.

With reference to G.O., No.51-I dated 23rd January 1905 recommending to the Government of India the demolition of the old head sluice at Bezwada and the abandonment of the proposed -- auxiliary head sluice, the Superintending Engineer, II Circle, is -- informed that this recommendation has been accepted by that Government and that formal orders will issue shortly. In the meantime the Supg. Engineer is requested to be so good as to have the flooring of the basin between the old and new head sluices examined and -- to report the result at a very early date.

Flag XII

Vide portion marked "basin" ~~portion coloured light red~~ in the map circulated with G.O., No.1136-I dated 4th December 1903.

C.J. 21.2.05

E. I.

F.W.G.S. 18/2/05

To

The Supg.Engineer, II Circle.

D.R. 18/2/05

D.E.I.

This draft memo is submitted with reference to E.I.'s personal orders

D.R. 18/2/05

8

Stock Form No. 154
8,000—11-5-04.

9 3

Public Works (1905) Department.

CURRENT No. ~~1073~~ 3029

From

[Name] J. H. Medlicott Esquire

[Designation] Supdg. Engineer 2nd Circle

[Station] Bezwada

No. 5069

Dated 3rd March 1905.

Enclosures {Plans, Others} Total.

Spare copies

Received ~~6. 3. 1905.~~

Registered ~~20 1905.~~

21-3-05

Passed on, by—

Registering Clerk 190 .

U. R. Clerk 190 .

Referencer 190 .

Record Supdt. 190 .

Drafting Officer 190 .

SUBJECT.

Floor of the basin in front of the new head sluice at Bezwada — Reports that the — consists of 18" thickness of roughstone in mortar laid on sand.

Soon

BACK PAPERS.

Papers

9

FURTHER PAPERS.

6/3/05

K 21/3/05

Urgent

To

The ~~Secretary to Government~~ Chief Engineer, ~~Public Works Department~~ for Irrigation.

7.8

Sir,

Page 10f C.f

With reference to your Memorandum No.560, dated 18th February 1905, I have the honour to report that the floor of the basin in front of the new Head Sluices consists of 18"* thickness of roughstone in mortar laid on sand.

*eighteen inches.

I have the honour to be,

Sir,

Your most obedient servant,

J H Shuttlecott. 3.3.05.

Superintending Engineer, II Circle.

2 3/05

P.W.D., Irrigation Branch.

(C.No.1265) from the Government of India, No.176 C.W.I., dated 1-2-05.

--

Submitted to His Excellency.

p. 7 of file

A

The proposal of the Inspector General of Irrigation to floor the portion coloured green referred to in para 3 of his note is absolutely useless as a measure to prevent the floor of the lock from blowing up. As I have already pointed[x] out, the pressure of the water at the upper gates would have blown up the floor long ago, if the lock had not been kept nearly full when the river was in high flood.

x in the Note by E.E. in S.O. No. 5278 d/ 23.1.05 Flag 5

B.

Whether the floor of the lock channel will be safe depends on the nature of the flooring in the basin, -- regarding which no definite information is available. This floor could of course be made safe if a lift gate was provided at the lower end of the channel.

TWSS.
9/2/05

[signature]
9.2.05

I am very glad that Mr. Garrett's opinion is confirmed by the Inspector General.

I agree with the first para. of the above note and as regards the second para. (marked B) I should like to know whether the floor of

[initials] 9.2.05

12

the Basin could be examined during the next closure of the Canal. Also whether the provision of a lift gate at the end of the channel would be a very costly affair.

It is satisfactory to know that we can dispense with the large expenditure on extending the old head sluice.

[signature]

13-2-05

D.I. [initials]

His Excellency.

The floor of the basin will be carefully examined, if found to be of dry stone the necessary protection against the blowing up of the lock Channel floor might be obtained by grouting.

The cost of a lift gate would be about ~~Rs~~ Rs 5000.

[signature]

18.2.05

[signature]

20-2-05

D.I. [initials]

[signature]

22.2.05

[initials]
22/2/05.

Sent on 18.2.05
560/Glag XIII

[initials] 24/2/05
put up

Papers.

A.S.

Put up
[initials] 24/2/05

U.S.
22/2/05
[initials]
23/2/05

memo to S.E. re examination of floor of basin. [initials]

(C.No.1073) from the Supg. Engineer, II Circle, No.506-I, dated 3-3-05.

D.I.

p. g. c. file

The Supg. Engineer, II Circle, who was asked to examine the flooring of the basin and report the result, states in his letter noted above that it consists of rough stone in mortar 18" thick, laid on sand. This will, presumably make the floor of the lock channel safe and a lift gate will be unnecessary.

If approved, a draft order will be submitted communicating the Government India's letter to the Supg. Engineer, II Circle, with the remark that -- Government do not approve of the proposal made in para 3 of the Inspector General's note.

I for orders
[illegible]
10/3/05.

10/3/05

Any repairs required to the basin floor should be carefully attended to every closure.
The S.E. should be asked to report whether the lock Chd. immediately above the lock is paved. If it is not paved the further paving suggested by the I.G. is unnecessary. If it is paved, the paving of the basin floor might be extended over the spaces shown in pencil hatching.
[illegible]
10.3.05

P.T.O.

14

On second thoughts I am inclined to agree that the portion coloured green by the I. G. should be paved like the basin floor, not for the protection of the lock floor, but for the better protection of the lower lock Ch^l. floor. The S. E. should be asked to have this work carried out.

W. G.
10.3.05

D. S.

A draft order is accordingly submitted for approval.

[signature] 18.3.05

E. I. Would not the object be better attained by making the floor of the lock channel sufficiently thick to resist the upward pressure this might be done at little cost by ~~boring~~ jumping holes in the & forcing liquid cement into the sand below, the method so often pursued in Egypt
20/3/05 RWGS.

I think we may accept the Inspector General's proposal. I daresay we could ensure the safety of the floor by the process

you suggest, but I don't think it would be cheap and I expect that instead of sand under the floor we should find silt. The order can give under him circulation notes.

E. J.

20.3.05

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

A

READ the following

G.O.No.603 I dated 10th June 1903

G.O.No.1387 I dated 15th December 1904

G.O.No.51 I dated 23rd January 1905.

Read also

Letter from the Govt.of India No.176 C.W.I. dated 1st Feby.1905

To the Supg. Engineer II Circle No.560 dated 18th Feby.1905

From - - - - - - 506 I dated 3rd March 1905.

Order. No. 316 dy 21. 3. 05

The letter from the Govt.of India read above will be communicated to the officers concerned.

2. The proposal of the Inspector General of Irrigation to floor the portion coloured green referred to in para 3 of his note is not of much use as a measure to prevent the floor of the lock from blowing up. The pressure of the water at the Upper gates would have blown up the floor long ago if the lock had ~~xxxx~~ not been kept nearly full when the river was in high flood. As regards the floor of the tail lock channel it is considered that the safety thereof depends on the nature of the flooring in the basin. As it is reported that the floor of the basin consists of rough stone in mortar 18 inches thick laid on sand, this will prevent the floor of the lo

channel from blowing up. The Inspector General's proposal to pave the portion coloured green like the basin floor though not required for the protection of the lock floor, would, it is thought, ensure the better protection of the floor of the lower lock channel. The Supg. Engineer will accordingly be requested to have the work carried out at an early date. He will also be asked to arrange for any repairs required for the basin floor being carefully attended to during ~~the~~ every closure of the canal.

3. Ordered that a copy of these proceedings be forwarded to the Govt. of India for information together with the paper plan returned.

Endorsement No. 317 I dy 21-3-05

Forwarded.

20.3.05

20/3/05

DESPATCHED
12 APR 1905

D.I. for perusal

20/3/05

To the Chief Engr. for Irrgn. D 10/4/05
" Supg. Engr. II Circle (with plans, estimates and copy of the paper plan) D 12/4/05
" Examiner P.W. Accts. D 10/4/05

18.8.05.